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Spring Canyon Watershed Project, Goshen County, Wyoming

FINAL ENVIRONMENTAL IMPACT STATEMENT

Blaine O. Halliday, State Conservationist
Soil Conservation Service

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CATALOGING - PREP.

Sponsoring Local Organizations
Lingle-Ft. Laramie Conservation District, Lingle, Wyoming 82223
Lucerne Canal Company, Lingle, Wyoming 82223

October 1974

Prepared by:

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Casper, Wyoming 82601

USDA ENVIRONMENTAL IMPACT STATEMENT

Spring Canyon Watershed Project
Goshen County
Wyoming

Prepared in accordance with
Sec. 102 (2)(C) of P.L. 91-190

Summary Sheet

- I. Final
- II. Soil Conservation Service
- III. Administrative
- IV. Description of action: A watershed project for watershed protection and flood prevention in Goshen County, Wyoming, to be implemented by sponsoring local organizations with federal assistance under authority of the Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Congress, 68 Stat. 666) as amended.
- V. Summary of environmental impact and adverse environmental effects:

Reduce average annual flood damage 95 percent. Improve vegetative cover in the watershed, increase irrigation water use efficiency, and reduce soil movement. Restore 85 acres of cropland to former productivity. Commit 100 acres of rangeland to use as a dam and reservoir and necessitate a 2-year disruption of vegetative cover on 75 acres of rangeland.
- VI. List of alternatives considered:

Alternatives evaluated include: (a) conservation land treatment; (b) floodplain management; and, (c) a constructed floodway.
- VII. Agencies from which written comments have been received:

Environmental Protection Agency
Department of the Interior
Department of Health, Education, and Welfare
Department of the Army
Department of Transportation
Advisory Council on Historic Preservation
Wyoming State Clearinghouse (Governor's Representative)
- VIII. Draft environmental statement transmitted to CEQ on May 23, 1974.

USDA SOIL CONSERVATION SERVICE
FINAL ENVIRONMENTAL IMPACT STATEMENT
for

Spring Canyon Watershed
Goshen County, Wyoming

Installation of this project constitutes an administrative action. Federal assistance will be provided under authority of Public Law 83-566 83rd Congress, 68 Stat. 666, as amended.

SPONSORING LOCAL ORGANIZATIONS

Lingle-Ft. Laramie Conservation District
Lucerne Canal Company

PROJECT OBJECTIVES AND PURPOSES

Watershed protection and flood prevention

PLANNED PROJECT

Land Treatment

Conservation land treatment will be accelerated throughout the watershed. Conservation land treatment is formulated on the basis of using each acre within its capability and planning measures in accordance with need. Accelerated assistance will be provided to plan and install conservation measures during the installation period. About 20 conservation plans covering 7,850 watershed acres will be prepared or revised. Conservation plans will be prepared by cooperators of the Lingle-Ft. Laramie Conservation District with assistance from the Soil Conservation Service. Plans will be prepared in cooperation with the appropriate state land administering agency or the Bureau of Land Management when involving state or federal land.

During the project installation period, adequate conservation land treatment ^{1/} will be accomplished on 641 acres of cropland, 427 acres of pasture and hayland, and 3,651 acres of rangeland. Partial conservation land treatment will also be accomplished on all other land in the watershed.

The typical conservation practice planned for rangeland is planned grazing systems to achieve proper grazing use. Planned grazing systems are typically grazing rotation with deferment or controlled season of use. To implement grazing systems, stockwater development is generally required. Planned stockwater development includes wells, pipelines, and spring development.

^{1/} Adequate treatment is defined as land used within its capability on which conservation practices that are essential to its protection and planned improvement have been applied.

Conservation practices planned for cropland are primarily conservation cropping systems and proper irrigation water management. Conservation cropping systems include crop rotations, crop residue management, and planned tillage practices to minimize erosion. Proper irrigation water management includes practices for water conservation and control such as irrigation ditch lining, pipelines, land leveling, and planned field irrigation systems.

Planned pasture and hayland conservation practices are pasture and hayland planting and management to minimize soil erosion and maintain productivity.

Structural Measures

A floodwater retarding structure will be constructed in Spring Canyon near the south section line of sec. 27, T. 26 N., R. 63 W. The structure will control a drainage area of 7.24 square miles. The reservoir will have no permanent storage. No incidental recreation values will be present at the structural site, and public access will not be provided.

The dam will be a zoned earth embankment about 57 feet high containing a volume of about 296,000 cubic yards. The center zone will be constructed of fine silty sand or sandy silt and the outer shell of well-graded gravelly sand. About 120,000 cubic yards of unconsolidated silty sand will be excavated from the foundation and replaced with compacted earth before placing the embankment. The borrow area is upstream from the structural site in the proposed flood pool area. No clearing will be required for structural installation.

The reservoir will have a sediment capacity of 180 acre-feet, the expected accumulation for the 75 years. Total capacity will be about 1,315 acre-feet at emergency spillway elevation.

The emergency spillway, constructed in the left abutment, will be about 60 feet wide. The inlet channel will be excavated in siltstone. Some fill will be placed in the exit channel. Due to the erosive nature of the emergency spillway, the emergency spillway hydrograph will be routed through the principal spillway with no flow through the emergency spillway.

The principal spillway will be a two-stage concrete drop inlet. The high stage will be set at the elevation of the 1 percent chance storm and the low stage at the elevation of the sediment pool. A maximum discharge of 20 cfs will be allowed to discharge from the low stage, and the high stage will discharge at a peak rate of 128 cfs. The two-stage riser will limit flow entering the Lucerne Canal to 20 cfs with larger discharges from events less frequent than a 1 percent chance of occurrence. The principal spillway discharges into the waterway of Spring Canyon. A drain pipe will remove water from the sediment pool.

Channel work will consist of:

1. Two grade stabilization structures installed in the 2,400-foot reach of the waterway of Spring Canyon directly downstream from the Interstate Canal. This reach, shown in table 3A as reach 1, is the

end of the defined waterway. Design capacity of each structure is 290 cubic feet per second.

2. A pipeline will be installed extending from the end of the waterway to the Lucerne Canal at a point below the crossing of U. S. Highway 26. The pipeline, shown in table 3A as reach II, will carry the controlled releases of the floodwater retarding structure from the damage area where no channel exists. Design capacity of the pipeline is 20 cubic feet per second.

A minimum of 100 acres of permanent easement will be required to construct, operate, and maintain the flood control facilities. Of this amount, 25 acres, including 5 acres for outlet channel works and 20 acres for the dam and spillways, will be required for structural works. The remaining 75 acres of permanent easement are for flood rights in the reservoir area. Installation of structural works will necessitate the use of alternative routes around the dam site for access to the upper part of the watershed. No persons or businesses will be displaced due to installation of structural works.

Nonstructural Project Measures

No nonstructural measures other than conservation land treatment are included in the planned project.

Land Use Changes

The project does not include plans for changing land use. However, protection afforded by the project will induce the restoration of 85 acres of previously cropped land to former productivity.

Operation and Maintenance

Operation and maintenance of structural measures will be the responsibility of the Lucerne Canal Company. Maintenance will be performed on a force account basis, costs will be met by assessment of project beneficiaries through the Lucerne Canal Company. Average annual operation and maintenance costs are estimated to be \$500. Average annual operation and maintenance cost estimates are based on 1973 prices. Operation and maintenance of structural measures may include:

1. Clearing of debris and soil from the diversion channel.
2. Clearing of principal spillway inlet.
3. Repair and maintenance of principal spillway.
4. Maintenance of vegetative cover on dam.
5. Repair and maintenance of emergency spillway.

Inspection of the structural works will be conducted annually.

Joint inspection by the representatives of the Lucerne Canal Company and the Soil Conservation Service will be conducted annually for the first 3 years following installation of the structural works. During the fourth year and all successive years, an annual inspection will be conducted by the Lucerne Canal Company. The Lucerne Canal Company will conduct an inspection of structural works after every major storm during the life of the structure. A written report of all inspections will be submitted to the Soil Conservation Service. The report will outline maintenance requirements and works of corrective maintenance performed.

Maintenance inspection reports will be reviewed by the Soil Conservation Service. Evidence that inspections or required maintenance are not properly performed will be reported to the State Conservationist for corrective action.

A specific operation and maintenance agreement will be executed between the Lucerne Canal Company and the Soil Conservation Service before a project agreement for the construction of structural measures is completed.

Project Costs

Estimated project installation cost is \$1,043,130 including \$490,580 for installation of conservation land treatment practices and \$552,550 for installation of structural measures. Public Law 566 funds will be used to finance \$572,800 and other funds, \$470,330. Public Law 566 funds will be used to finance \$35,000 for technical assistance to install land treatment practices and \$537,800, including \$452,500 for construction, for installing structural measures. Other funds will be used to finance \$455,580 for installing land treatment practices and \$14,750 for installing structural measures.

Estimated Project Installation Cost

| Installation cost item | Estimated cost | | TOTAL |
|---------------------------|----------------|-------------|-------------|
| | PL 566 Funds | Other Funds | |
| Land treatment | \$ 35,000 | \$455,580 | \$ 490,580 |
| Structural | 537,800 | 14,750 | 552,550 |
| (construction) | (452,500) | (0) | (452,500) |
| GRAND TOTAL | \$572,800 | \$470,330 | \$1,043,130 |

ENVIRONMENTAL SETTING

Physical Resources

Spring Canyon Watershed encompasses an area of 18,865 acres or 29.5 square miles in Goshen County, southeastern Wyoming. The watershed is in the Missouri Water Resource Region and is a left bank tributary to the North Platte River. Spring Canyon is the principal watershed drainage; however, smaller unnamed tributaries and bottomlands of the North Platte River make up a large portion of the watershed.

Spring Canyon Watershed is a rural agricultural area. Lingle, 1970 population 446, is the only town in the watershed. Scottsbluff, Nebraska, 40 miles east of the watershed, is the nearest town offering a variety of trade facilities and specialized services. Cheyenne and Casper, Wyoming, are within 150 miles; and Denver, Colorado, the nearest large urban center, is within 200 miles.

The demographic characteristics of Goshen County are similar to those of the watershed. The 1970 population of Goshen County was 10,885 with a population density of 4.9 persons per square mile. Rural population in 1970 constituted 61 percent of the county population and was divided equally between rural farm and rural non-farm. Goshen County is an area of decreasing population. County population decreased 8.8 percent from 1960 to 1970 with rural population decreasing approximately 1,100 persons or 14.3 percent while urban population increased 1.2 percent. ^{2/} The watershed and Goshen County are typical of the western portion of the Missouri Water Resource Region, particularly in relation to low population densities, decreasing rural populations, and an agricultural economic base.

Spring Canyon is a dry wash with ephemeral flow. Runoff flows south and southwesterly onto a broad alluvial wash or fan. There are about 5 miles of defined waterway from the upper part of the watershed to just below the Interstate Canal. Below this point no waterway can be defined, and flows spread across the alluvial fan. (See project map.) The 5 miles of defined waterway has an average width of 20 feet, but varies from near zero to 100 feet. The waterway depth averages about 2 feet, and slopes vary from 3 percent in the upper reaches to 1 percent in the lower reaches. The defined waterway from the Interstate Canal to the upper reaches of the watershed serves as an access trail. The trail is ungraded with access privately controlled immediately above the Interstate Canal.

Vegetation in the waterway is very sparse. Vegetation is composed of about 50 percent perennial grasses, 25 percent annual broadleaf weeds, and 25 percent annual grasses.

The head of Spring Canyon is on Pine Ridge, an erosional remnant of the Arikaree formation rising nearly 900 feet above the surrounding valley floor. Elevations in the watershed range from about 4,100 feet above mean sea level at the North Platte River to about 5,000 feet on Pine Ridge. Topography of the watershed is generally rolling in the upland areas. Alternate ridges and swales originating on Pine Ridge lead into low, rolling hills, alluvial-colluvial fans, and valley terraces near the lower reaches of the watershed. The alluvial-colluvial fans and valley terraces are areas of intensively farmed irrigated land. Slopes range from near vertical escarpments along the canyon walls in the upper part of the

^{2/} U. S. Bureau of the Census, U. S. Census of Population: 1970 Number of Inhabitants, Final Report PC(1)-A52 Wyoming, U. S. Government Printing Office, Washington, D.C., 1970.

watershed to near level or gently sloping fans and terraces in the lower part of the watershed.

The Brule and Arikaree formations of Oligocene and Miocene Age respectively comprise the bedrock geologic formations in the watershed. The Brule is a flesh-colored to buff siltstone that erodes quite readily. It is overlain unconformably by the basal Arikaree, which is a fairly thick, well-cemented conglomerate in this watershed. ^{3/}

The Arikaree is hard and quite durable, and occurs in the upper portions of the watershed. The capping effect of the Arikaree over the softer Brule results in high, relatively flat-topped benches dissected by deep canyons with steep walls.

The Brule was deposited in a large basin containing fresh water lakes, mud flats, and slow, meandering streams. Uplift of the Laramie Range rejuvenated streams resulting in transportation and deposition of the coarse, conglomeritic Arikaree formation. The area was then upwarped and faulted although no major faults are discernible within the watershed. The uplift caused an increase in the rate of erosion which has modified the topography to its present condition.

There are no known commercially minable mineral deposits in the watershed.

Soils in the lower part of the watershed adjacent to the North Platte River occur in association with river wash. The soils are excessively drained, hummocky, sandy, and gravelly. Soils found higher in the floodplain of the North Platte River are nearly level, deep, sandy, or loamy soils.

Soils on alluvial fans such as the Spring Canyon floodplain are nearly level, deep, loamy sands, and nearly level fine sandy loam underlain by loose sand and gravel. Along the upper margins of the alluvial fans are moderately steep to steep high terrace rims with very gravelly soils.

Most of the soils in the upper watershed are moderately steep to steep, shallow, fine sandy loam underlain by soft sandstone. Areas of nearly level to sloping, deep, fine sandy loam soils can be found in the upper watershed.

The upper part of the watershed is primarily rangeland, and the lower part is irrigated cropland intermingled with small areas of rangeland. ^{4/} Land capability classes of the rangeland are principally VI and VII. ^{4/} Approx-

^{3/} All information and data, except as otherwise noted by reference to source, were collected during watershed planning investigation by the Soil Conservation Service, U. S. Department of Agriculture.

^{4/} USDA, Soil Conservation Service with Wyoming Agricultural Experiment Station, Soil Survey Goshen County, Wyoming, Southern Part, page 48-50, U.S. Government Printing Office, Washington, D.C., November 1971.

imately 30 percent of the upper part of the watershed is topographically steep ridges and valley walls composed of shallow loamy (80 percent) and very shallow (20 percent) range sites. Ecological condition of the vegetation on the shallow loamy range sites in this area is about 20 percent excellent, 60 percent good, and 20 percent fair. As ecological condition on shallow loamy sites deteriorates, bunchgrasses (bluebunch wheatgrass, Agropyron spicatum, and little bluestem, Andropogon scoparius) are replaced by blue grama grass, Bouteloua gracilis, and threadleaf sedge, Carex filifolia. Ecological condition of the vegetation on the very shallow range sites of the steep ridges and valley walls is about 50 percent excellent and 50 percent good. As ecological condition on very shallow sites deteriorates, bunchgrasses (bluebunch wheatgrass, Agropyron spicatum, and little bluestem, Andropogon scoparius) become less dominant with juniper, Juniperus spp., and red threeawn, Aristida longiseta, becoming more dominant.

Approximately 70 percent of the rangeland is bench areas topographically below steep ridges and valley walls and is composed of loamy (70 percent) and shallow loamy (30 percent) range sites. Ecological condition of the vegetation on loamy range sites in this area is about 5 percent excellent, 30 percent good, 60 percent fair, and 5 percent poor. As ecological condition on the loamy range site deteriorates blue grama grass, Bouteloua gracilis, threadleaf sedge, Carex filifolia, and buffalo grass, Buchloe dactyloides, become more dominant as needleandthread grass, Stipa comata, and western wheatgrass, Agropyron smithii, become less dominant. Ecological condition of the vegetation on shallow loamy sites is about 15 percent excellent, 30 percent good, 50 percent fair, and 5 percent poor. Vegetative changes with changes in ecological condition are the same as those described for the shallow loamy site discussed above.

Land capability classes of the irrigated land are: 20 percent Class I, 50 percent Class II, 20 percent Class III, and 10 percent Class IV. Flood damage occurs mainly on Class II and Class III irrigated lands. ^{2/} Productivity of irrigated cropland in the watershed is among the highest in the state. Well-drained soils and an adequate growing season provide the watershed with a high potential for producing agricultural commodities suited to temperate climatic conditions. Principal crops produced are corn, sugar beets, dry beans, and alfalfa. Projected potential production levels by 2000 are 28.9 tons corn silage, 32.7 cwt. beans, 29 tons sugar beets, and 8.7 tons alfalfa hay.

Land use for the 18,865 acres in the watershed is: Irrigated land, 5,720 acres; dry crop, pasture, and hayland, 440 acres; rangeland, 11,855 acres; and other uses, 850 acres. Other uses include roads, highways, railroad rights-of-way, irrigation canals, farmsteads, and the town of Lingle.

Climatic conditions are subject to wide seasonal extremes. Temperature extremes range from a maximum of about 107° to a minimum of about 33° below zero. The growing season averages 147 days. The average date of the last killing frost (28° F.) is May 6, and the first killing frost October 1. Climatic data are taken from records of the Torrington weather observation station about 10 miles east of the watershed.

Mean annual precipitation in the watershed is 13 inches and ranges from 8.5 to 22.0 inches. Approximately 63 percent of annual precipitation occurs from April 1 to July 31. Summer rainstorms are usually short duration, intense thunderstorms. The average total seasonal depth of fresh fallen snow is 33 inches, and there is very little accumulation of snow pack. The major portion of snow precipitation is lost to evaporation.

The major source of irrigation water is the North Platte River. Irrigation water diverted from the North Platte River is delivered to irrigated land in the watershed in two primary canals--the Interstate and Lucerne. The Interstate Canal delivers irrigation water to approximately 118,000 acres of irrigated land in southeastern Wyoming and western Nebraska including about 1,700 acres in the watershed. The Interstate Canal traverses the watershed southeasterly in a meandering manner crossing Spring Canyon in a large flume. The Lucerne Canal serves approximately 4,000 acres of lower lying lands in the watershed. The canal crosses the watershed in a southeasterly direction ending at Rawhide Creek. The canal crosses the alluvial-colluvial fan of Spring Canyon, and no provisions for cross-drainage flows have been provided.

5/ Ibid, pages 48-50

Land capability class indicates, in a general way, the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations when used for field crops, the risk of damage when they are used, and the way they respond to treatment. Classes are generally defined:

Class I - Soils with few limitations that restrict their use.

Class II - Soils with moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III - Soils with severe limitations that reduce the choice of plants, require special conservation practices, or both.

Class IV - Soils with very severe limitations that reduce the choice of plants, require very careful management, or both.

Class V - Soils subject to little or no erosion but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife habitat.

Class VI - Soils with severe limitations that make them generally unsuited for cultivation and limit their use largely to pasture, range, woodland, or wildlife habitat.

Class VII - Soils with very severe limitations that make them unsuited for cultivation and that restrict their use largely to pasture or range, woodland, or wildlife.

Class VIII - Soils and land forms with limitations that preclude their use for commercial production of plants and restrict their use to recreation, wildlife habitat, or water supply, or to aesthetic purposes.

No significant storage or other beneficial use of surface water runoff from Spring Canyon has been made. Groundwater resources in the upper part of the watershed are limited. Wells generally produce less than 50 gallons per minute and are used primarily for stock water. Wells have been developed in the lower part of the watershed and draw from the water table of the North Platte River. Wells in the lower part of the watershed generally have a capacity of about 1,000 gallons per minute and are used for irrigation of lands not served by surface water and for supplementary water to other irrigated land.

Plant and Animal Resources (Flora and Fauna)

Spring Canyon provides habitat for a limited variety of big game, upland game, and small animal species. Wildlife habitat in the watershed varies with elevation, soil types, plant communities, and land use.

Big game animals found in the watershed include antelope, mule deer, and whitetailed deer. Mule deer are found throughout the watershed; however, primary mule deer habitat is provided in the upper part of the watershed where brush-covered draws and steep slopes provide fair habitat dominated by ponderosa pine, Pinus ponderosa, with an understory consisting of scattered amounts of bitterbrush, Purshia tridentata, mountain mahogany, Cercocarpus montanus, and big sagebrush, Artemisia tridentata. Antelope occupy upland areas. The bunch grass-sagebrush composition on bench areas in the upper part of the watershed provides fair antelope habitat with needleandthread grass, Stipa comata, big sage, Artemisia tridentata, and silver sage, Artemisia cana, as the dominant plants. Whitetailed deer inhabit low lying areas adjacent to the North Platte River where cottonwood, Populus sargentii, with a thick understory of silver sagebrush, Artemisia cana, big sagebrush, Artemisia tridentata, rose, Rosa spp., and willow, Salix spp., provide good habitat.

Small animals and upland game in the watershed include pheasant and cottontail rabbit. Irrigated lands with grassy irrigation ditch systems and crop residue provide primary habitat for small animals and upland game; however, cottontail rabbits are found throughout the watershed.

Game animal resources in the watershed are utilized by the hunting public under regulations established by the Wyoming Game and Fish Commission.

Access to game or other wildlife resources is possible using existing roads and trails; trespass consent of landowners is required on all but state and federally-owned land.

Game animal population and harvest data for the watershed are not available. Population and harvest data are tabulated only for much larger areas such as a game management unit, county, or district. Consultation with the Wyoming Game and Fish Commission indicates a detailed analysis of animal populations is not warranted.

Small animals and predators found in the watershed include coyote, fox, burrowing animals, birds of prey, song birds, migratory waterfowl, and fur bearers including mink, beaver, and muskrat. Furbearers occupy the

marshy areas and stream channels of the North Platte River. Trapping seasons and regulations for taking furbearers are established by the Wyoming Game and Fish Commission. Migratory waterfowl seasonally inhabit portions of the North Platte River. Regulations and seasons for the hunting of migratory waterfowl are established by the Wyoming Game and Fish Commission in cooperation with the Flyway Council for the Central Flyway.

Currently, there are no fisheries in the drainage area, and there is only a limited fishery for trout and channel catfish in the North Platte River. Information regarding use of the fishery is not available, although seasons and regulations are established for the area by the Wyoming Game and Fish Commission.

The 1973 edition of "Threatened Wildlife of the United States" ^{6/} published by the U. S. Department of Interior, Bureau of Sport Fisheries and Wildlife, lists two species that inhabit the area including Spring Canyon Watershed: The American Peregrine Falcon (Falco peregrinus anatum); and the Ferruginous Hawk (Buteo regalis) listed as "undetermined." No other species listed in this reference is known to inhabit the watershed.

Economic Resources

Economic activity in the watershed is almost entirely agriculturally related. The major type of agricultural enterprise is the irrigated farm-ranch. Presently, there are 46 farm-ranch units operating in the watershed, and most are family operated. The average size operating unit in Goshen County is 1,505 acres with approximately 175 acres irrigated land and 1,330 acres rangeland, dryland, and other uses. In the county the average value of land and buildings per farm is about \$131,341. Average value of farm products sold is about \$29,468 per farm with approximately one-third of the revenue derived from crops and two-thirds from livestock and livestock products. ^{1/}

Land ownership in the watershed is as follows: Federal, 1,210 acres (6.4 percent), state, 1,165 acres (6.2 percent), and private, 16,490 acres (87.4 percent). Public or federal land is rangeland in the upper part of the watershed and is managed by the Bureau of Land Management under Section 15 of the Taylor Grazing Act.

The current value of privately-owned land in the watershed varies from \$50 to \$75 per acre for rangeland, approximately \$200 per acre for dry cropland, and from \$400 to \$500 per acre for irrigated land.

^{6/} Threatened Wildlife of the United States, 1973 Edition; Resource Publication 114, March 1973. Compiled by Office of Endangered Species and International Activities, Bureau of Sport Fisheries and Wildlife, U. S. Department of the Interior. Published by Bureau of Sport Fisheries and Wildlife.

^{1/} U. S. Bureau of the Census, Census of Agriculture, 1969
Volume 1, Area Reports, Part 40, Wyoming

Crops are produced primarily on irrigated land. Principal crops are corn, dry beans, sugar beets, and alfalfa. Average crop yields per acre are: Corn, 15.7 tons of silage; dry beans, 19 cwt; sugar beets, 17.2 tons; and alfalfa hay, 3.8 tons. Beef cattle is the primary livestock enterprise. Cow-calf operations and a few fat cattle feeding operations are the major beef production activities.

Transportation facilities in the watershed are excellent. Nearly all farms and ranches have all-weather access to state and federal highways leading to commercial and market centers. U. S. Highway 85 leads in a north-easterly direction from Lingle. U. S. Highway 26 traverses the watershed from northwest to southeast through Lingle and serves the watershed as the major market road. Several county and township roads provide an excellent transportation network for local and farm machinery traffic. A track of the Burlington-Northern Railroad parallels U. S. Highway 26 providing transportation facilities for farm goods to and from sub-regional and regional trade centers. (See project map.)

The town of Lingle is the local community center and offers limited trade facilities. Torrington, 10 miles east of the watershed on U. S. Highway 26, serves as the local trade center. The major trade center for the watershed and surrounding area is Scottsbluff, Nebraska, approximately 40 miles east of the watershed.

Mean income of rural farm families in Goshen County is below state and national mean family income. Mean income of rural farm families in Goshen County in 1970 was \$8,122 compared to \$9,482 state-wide and to a mean income of all Wyoming families of \$10,127. Nationally, mean income of rural farm families in 1970 was \$8,795 and of all families, \$10,999. ^{8/} Mean income of rural farm families in Goshen County in 1970 was 72 percent of mean income of all families in the nation. Approximately 14.4 percent of all Goshen County families had income less than poverty level in 1970. Per capita income as a percent of national average for the Bureau of Economic Analysis economic area, which includes the watershed, is projected to decrease by 1980 and to increase slowly to a level lower than present by 2000. ^{9/}

The civilian labor force in Goshen County in 1970 was 4,204 persons. The county unemployment rate was 4.0 percent compared to 4.8 percent state-wide. ^{10/} Approximately 17.6 percent of male and 39.5 percent of female employed civilians in Goshen County are underemployed. Approximately 22.9 percent

^{8/} U. S. Bureau of the Census, Census of Population: 1970 General Social and Economic Characteristics, Final Report PC(1)-C52, Wyoming.

^{9/} U. S. Water Resource Council, 1972 OBERS Projections, Vol. 1, Concepts, Methodology, and Summary Data, p. 51.

^{10/} Census of Population: 1970 General, Social, and Economic Characteristics, Op. Cit.

of employed man-years of labor are unutilized because of underemployment. ^{11/}

Agricultural employment in Goshen County was about 25 percent of total county employment in 1970.

Recreational Resources

Outdoor recreation in the watershed is limited. Natural resources offer limited opportunity for outdoor recreational use. There are no public recreation areas or commercial outdoor recreation enterprises in the watershed. The watershed has limited potential for the development of recreation facilities or increased recreation use. The comprehensive outdoor recreation plan, prepared by the State of Wyoming, lists no plans for development in the watershed.

Recreation activity is primarily associated with wildlife resources including the hunting of big game, upland game, and waterfowl. There is a limited amount of fishing and rock hunting in the watershed. Access for recreation use requires landowner permission on private land.

Archaeological and Historical Resources

Mr. Paul Westedt, State Historic Preservation Officer, reviewed the watershed area and responded, "No presently known historic or archaeologic values would be affected by the indicated area of actual construction. However, the site is only about three miles distant from the route of the Oregon Trail and the historically rich North Platte River. Especial vigilance for archaeologic values during the construction period are indicated. In case of discovery of any ancient human activity, construction should be halted and this office notified. Response would be immediate so as not to delay work more than absolutely necessary." ^{12/}

The National Register of Historic Places and the Federal Register Notice of February 19, 1974, and all succeeding supplements make no reference to historic places in the watershed.

The State Archaeologist, Dr. George Frison, completed an evaluation of archaeological resources in the watershed and reported, "We found one site which is located in the S.E. ¼ of section 26, T26N, R63W. The site, a stone circle and quartzite quarry, is located far above the proposed high-water level and away from the dam construction area. It does not appear to be in danger and I am making no recommendations for salvage or preventative actions. The site will be added to the Wyoming Archaeological Site Catalogue." ^{13/}

^{11/} Ronald E. Kampe and William A. Lindamood, Underemployment Estimates by County, United States, 1960. Agricultural Economic Report No. 66, Economic Research Service, Washington, D.C., October 1969.

^{12/} Correspondence from Mr. Westedt to Mr. Blaine O. Halliday, State Conservationist, Soil Conservation Service, Wyoming, March 6, 1974.

^{13/} Correspondence from George M. Zeimens, Assistant State Archaeologist, to Soil Conservation Service, Wyoming, July 3, 1974.

In the event that previously unknown cultural resources are encountered during construction, the National Park Service Archaeological Center will be notified and provided adequate time to protect and preserve any discovered data or materials.

Soil, Water, and Plant Management Status

Land use in the North Platte River Valley has evolved because of economic factors, climatic conditions, productivity of soils, and water resource developments. The failure of early settlers to make a living by ranching resulted in attempts to increase hay and pasture production through irrigation. Small irrigation water supply systems, such as the Lucerne Canal built in 1893, was the first effort to organize and manage irrigation water on a cooperative basis. Pathfinder Dam and the Interstate Canal, built by the Bureau of Reclamation in 1905, was the first federal project to provide irrigation for a large acreage of the North Platte Valley. The development of irrigation systems initiated more intensive agriculture. Over time, economic conditions forced operators to become more efficient; and small grain, corn, and introduced forage species replaced irrigated hay and pasture. Presently, only a small acreage of the least productive irrigated land remains as hay and pasture. Past trends and anticipated increases in technology indicate that remaining irrigated hay and pasture will be converted to intensively farmed cropland.

Dryland farming in the watershed is economically marginal under present conditions. Above average precipitation in the 1920's resulted in the development of dryland farming. Drought, wind erosion, and economic conditions in the 1930's forced abandonment of most dry cropland. Dry cropland remaining after 1940 has been seeded with permanent grass or converted to irrigated cropland. Presently, there are only about 120 acres of dry cropland in the watershed.

Floods from Spring Canyon have caused abandonment of approximately 85 acres of cropland in the floodplain. Frequent damage to crops and the on-farm irrigation system caused continued farming of the acreage to be infeasible.

Water resource developments and movement to more intensive farming were paralleled by increased use of farm conservation practices. The Lingle-Ft. Laramie Conservation District was formed in 1946. Presently, 43 of the 46 operating units covering 91 percent of the land in the watershed are cooperators of the Conservation District. Basic conservation plans have been prepared by 40 cooperators covering 88 percent of the watershed. Approximately 80 percent of the planned practices included in basic conservations plans have been applied by the cooperators.

Adequate conservation land treatment has been accomplished on about 50 percent of the cropland, 40 percent of the pasture and hayland, and 30 percent of the rangeland in the watershed. Rural fire protection for the watershed is available. Fires are kept within the state's fire control goals.

WATER AND RELATED LAND RESOURCE PROBLEMS

Land and Water Management

The most significant land and water management problem in the watershed is improper use of land and water resources causing accelerated soil erosion and increasing the amount of water loss through runoff. In the upper part of the watershed grazing overuse has caused deterioration in ecological condition of rangeland vegetation and accelerated soil erosion. (See ENVIRONMENTAL SETTING.) Average annual herbage production (pounds) and annual soil movement (tons per acre per year) are tabulated by dominant range site for the rangeland on steep ridges and valley walls and on bench areas:

Steep Ridges and Valley Walls (30 percent)

| Range site | Ecological condition class | | | |
|---------------------|----------------------------|-------|-------|------|
| | Excellent | Good | Fair | Poor |
| Shallow loamy (80%) | (20%) | (60%) | (20%) | |
| Soil movement | 1 | 3 | 4 | 8 |
| Herbage production | 900 | 750 | 300 | 250 |
| Very shallow (20%) | (50%) | (50%) | | |
| Soil movement | 2 | 4 | 6 | 12 |
| Herbage production | 450 | 350 | 150 | 100 |

Bench Areas (70 percent)

| | Ecological condition class | | | |
|---------------------|----------------------------|-------|-------|------|
| | Excellent | Good | Fair | Poor |
| Loamy (70%) | (5%) | (30%) | (60%) | (5%) |
| Soil movement | .5 | 1 | 2 | 5 |
| Herbage production | 1,300 | 1,000 | 450 | 400 |
| Shallow loamy (30%) | (15%) | (30%) | (50%) | (5%) |
| Soil movement | 1 | 2 | 3 | 6 |
| Herbage production | 900 | 750 | 300 | 250 |

The average rate of soil movement on rangeland is about $2\frac{1}{4}$ tons per acre per year, and average herbage production is about 620 pounds per acre annually.

In the cropland area, inadequate irrigation facilities and field irrigation systems cause inefficient use of irrigation water and accelerate soil erosion. On-farm irrigation efficiency is presently about 40 percent. Soil movement, both wind and water, on cropland averages about 8 tons per acre annually.

Flood hazards have caused installation of some land treatment measures to be impractical. In other cases, flood damage has affected the economic ability of landowners to apply needed practices.

Floodwater Damage

The principal water-related problem in the watershed is floodwater runoff. Convective spring and summer rainstorms in the upper part of the watershed produce runoff of flood magnitude. Floodwaters and transported sediment and debris damage crops, farmstead properties, irrigation works, and public utilities in the floodplain.

Major floods have occurred six times in the past 30 years. The most recent of the major damaging floods occurred in 1955 and 1969. Flood damages are incurred about every other year. Because of the convective nature of the rainstorms, more than 95 percent of the floods occur in the months May through September. July is the most probable month for a damaging event.

The floodplain of Spring Canyon covers approximately 1,140 acres affecting 46 operating units and includes 1,050 acres of cropland, eight farmsteads, U.S. Highway 26, and the Lucerne Canal, belonging to the Lucerne Canal Company. There are 85 acres of previously cropped land in the floodplain which have been abandoned because of flood hazard.

The flood in 1955 was an infrequent event with about a 1 percent chance of occurrence. The storm flooded approximately 1,050 acres of intensively farmed cropland, breached the Lucerne Canal causing a delay in delivery of irrigation water to 4,000 irrigated acres, caused damage to eight farmsteads, and inundated U. S. Highway 26 causing a delay and detour of traffic. Flood damage began at the point where the Spring Canyon channel loses definition just below the Interstate Canal. Floodwater entering the Lucerne Canal overtopped and washed out the canal bank, flooding cropland between the Lucerne Canal and U. S. Highway 26 in several locations between Spring Canyon and Lingle. Below the highway at Spring Canyon floodwaters damaged crops and farmstead properties before reaching the North Platte River.

Projections of land use, crops, yields, and highway traffic indicate that damage from a 1 percent chance event in the future would be about \$200,000.

The flood in 1969 was a 20 percent chance event. The storm flooded approximately 300 acres including 255 acres of intensively farmed cropland. The flood caused damage to three farmsteads, breached the Lucerne Canal causing delay in delivery of irrigation water to 4,000 irrigated acres, and inundated U. S. Highway 26 causing a delay in traffic. The damage characteristics and route of flooding were similar to the 1955 flood, but on a smaller scale. Damage caused by a 20 percent chance event representative of the evaluation period is estimated to be approximately \$70,000.

Small floods which occur more frequently do not cross U. S. Highway 26 but do cause operational problems and minor damage to the Lucerne Canal. The smaller, more frequent floods affect land use in the floodplain area between the Interstate Canal and U. S. Highway 26. The hazard of frequent floods has caused the abandonment of 85 acres of previously cropped farmland. The value of this land is about \$200 per acre.

Total average annual damage in the Spring Canyon Watershed is estimated to be \$36,345. Estimated average annual floodwater damage is \$32,970. Crop

and pasture floodwater damage from decreased crop yields, decreased crop quality, and increased production costs is estimated to be \$24,770. Other agricultural floodwater damage is estimated at about \$8,100 and includes damage to farmsteads, the Lucerne Canal, and crop losses due to delay in delivery of irrigation water to 4,000 irrigated acres in 24 farm units served by the Lucerne Canal. Non-agricultural floodwater damages are estimated to be about \$100 arising from damage to U. S. Highway 26 and delay and detour of traffic.

Sediment damages in Spring Canyon are closely associated with floodwater damage. Sediment damages cause decreased crop quality, increased crop production costs, increased operation and maintenance cost of the Lucerne Canal, and increased highway maintenance and cleanup. Average annual damage attributed to sediment is estimated to be approximately \$910.

Indirect damages are estimated to be \$2,465. Indirect damages include additional time required to irrigate flooded lands, additional time required to perform cultural operations, and the cleanup of flood-transported debris.

Economic-Social Problems

Mean income of rural farm families in Goshen County is below state and national mean family income. Underemployment of the civilian labor force in the county is high. Goshen County is an area of decreasing population. County population decreased 8.8 percent from 1960 to 1970 with rural population decreasing approximately 1,100 persons or 14.3 percent while urban population increased 1.2 percent. (See ENVIRONMENTAL SETTING.)

Selected characteristics on all Goshen County farms and Economic Class 1-5 farms are presented in the following tables. The percent tenancy of farms in the county is 27 percent. The average age of farm operators is 50.3 years for all farms in the county and 49.9 years for operators of Class 1-5 farms. The average age of all operators increased about 1 year from 1964 to 1969. About 86 percent of all farms are Economic Class 1-5 farms with sales of \$2,500 or more. About 83 percent of Class 1-5 farms in the county are individual or family farms employing 1½ man-years of hired labor or less per year.

Selected Characteristics of All Goshen County Farms ^{a/}

| <u>Farm Tenure</u> | <u>Percent of Farms</u> |
|--------------------|-------------------------|
| Full owner | 38 |
| Part owner | 34 |
| Tenants | 27 |

| <u>Age of Farm Operators (Percent of Operators)</u> | |
|---|------------|
| Under 25 years | 3 |
| 25 - 34 years | 9 |
| 35 - 44 years | 20 |
| 45 - 54 years | 27 |
| 55 - 64 years | 28 |
| 65 years and over | 12 |
| Average age | 50.3 years |

Percent of Farms by Economic Class

| | |
|---|------|
| Class 1 - Sales of \$40,000 and over | - 18 |
| Class 2 - Sales of \$20,000 to \$39,999 | - 27 |
| Class 3 - Sales of \$10,000 to \$19,000 | - 20 |
| Class 4 - Sales of \$ 5,000 to \$ 9,000 | - 12 |
| Class 5 - Sales of \$ 2,500 to \$ 4,999 | - 9 |
| Class 6 and other categories | - 14 |

a/ Census of Agriculture, 1969, Volume 1 Area Reports,
Parts 40, Wyoming Op. Cit.

Selected Characteristics of Economic Class ^{b/}1-5 (Sales over \$2,500) -
Farms in Goshen County

Average size of farm - 1,709 acres

Average value of land and buildings per farm - \$147,367

Average market value of all agricultural products
sold per farm - \$33,971

Farm Tenure (Percent of Farms)

| | |
|------------|------|
| Full owner | - 34 |
| Part owner | - 39 |
| Tenants | - 27 |

Farms by Type of Organization (Percent)

| | |
|----------------------|------|
| Individual or family | - 83 |
| Partnership | - 12 |
| Corporation | - 4 |
| Other | - 1 |

Age of Farm Operators (Percent of Operators)

| | |
|-------------------|------|
| Under 25 years | - 2 |
| 25 - 34 years | - 10 |
| 35 - 44 years | - 21 |
| 45 - 54 years | - 28 |
| 55 - 64 years | - 27 |
| 65 years and over | - 12 |

Average age - 49.9 years

b/ Ibid.

ENVIRONMENTAL IMPACTS

Conservation Land Treatment

Soil, water, and vegetative management and conservation practices included in the plan will improve and enhance aesthetic, wildlife, and recreational values as well as increase agricultural production in the watershed. Conservation treatment of rangeland will improve ecological condition class and increase vegetative cover which will reduce average erosion on rangeland about 15 percent to 1.9 tons per acre per year. Average herbage production is expected to increase 45 percent to 890 pounds per acre annually.

Conservation treatment of cropland will maintain and enhance soil productivity and therefore provide for sustained intensive agricultural use and increased agricultural productivity. Conservation treatment will reduce average wind and water soil movement on cropland about 40 percent to 5 tons per acre annually. Planned treatment of cropland will increase irrigation water use efficiency. On-farm irrigation efficiency with planned treatment is expected to be about 50 percent or 25 percent greater than anticipated without planned treatment. Planned conservation treatments are necessary to maintain potential production projected for year 2000. (See discussion ENVIRONMENTAL SETTING.)

Structural Measures

Project structural measures will significantly reduce floodwater damages in the watershed. Protection will be afforded 1,140 acres, effecting 46 operating units, including 1,050 acres of cropland, eight farmsteads, U. S. Highway 26, and the Lucerne Canal. Residual or with-project damages are anticipated because of runoff from the uncontrolled drainage area below the detention dam.

Structural measures will reduce damages from a 5-year storm from \$70,000 to \$150 (99.7 percent). Cropland area flooded will be reduced from 300 to 10 acres. No damage will be incurred by farmsteads, U. S. Highway 26, or the Lucerne Canal.

Structural measures will reduce damages from a 100-year storm from \$200,000 to \$65,000 (67.5 percent). Cropland area flooded will be reduced from 1,050 acres to 330 acres. Flood damage to farmsteads will be reduced from eight farmsteads damaged to three. Damage will occur to U. S. Highway 26 but detour and delay of traffic will be for a shorter period. Floodwater will enter and could breach the Lucerne Canal causing a delay in delivery of irrigation water to 4,000 irrigated acres.

Structural measures will provide sufficient protection to restore 85 acres of cropland to former productivity. The acres of cropland to be restored to former productivity accounts for 8 percent of the land in the floodplain, 27 percent of the benefits, and 40 percent of residual damages. Approximately \$9,000 of with-project damages in the 100-year storm are due to increased damages on the 85 acres of cropland to be restored to former productivity.

Average annual flood damages will be reduced 95 percent or \$34,070. Secondary benefits, estimated to be \$4,150 annually, will accrue to the agri-business industry serving the watershed area in the form of additional agricultural inputs provided and output handled.

Installation of structural measures will commit about 100 acres of range-land to use as flood control facilities. Approximately 75 of the 100 acres consists of very sparse vegetation (see ENVIRONMENTAL SETTING) in the waterway of Spring Canyon and will be committed to reservoir area and lost; the remaining 25 acres will continue to produce vegetation. Approximately 75 acres of rangeland will be disturbed during structural installation, and vegetation will be lost for about 2 years. All areas disturbed will be revegetated immediately after installation is completed. Installation of structural measures will necessitate the use of alternative routes for access to the upper part of the watershed around the dam site.

No incidental recreation values will be present at the structural site, and public access will not be provided. No archeologic, historic, or scientific values will be affected by project installation or operation. Installation and operation of the project will not affect any rare or endangered species of plants or wildlife.

Economic and Social

Project measures will exert an overall economic force which will tend to increase and stabilize income, reduce underemployment and unemployment, and reduce the rate of population outmigration. (See "Economic Resources" previously presented in ENVIRONMENTAL SETTING AND "Economic and Social Problems" previously presented in WATER AND RELATED LAND RESOURCE PROBLEMS.) Project installation will produce redevelopment and secondary economic benefits. An estimated 17 man-years of employment will be created for both skilled and unskilled labor during project associated construction activities. The multiplier effect of expenditures for materials and wage earner spending will bolster the local economy. Average annual operation and maintenance will generate about one-tenth of a man-year of semi-skilled employment.

Increased production of agricultural commodities will create demand for additional agricultural inputs and services and generate more efficient operation of businesses serving agriculture in the local area. Increased agricultural production will also permit more efficient use of farm family labor as well as the local agricultural labor force.

The project will not displace any person, business, or farm operation.

Average annual project costs, benefits, and the ratio of benefits to costs are summarized in Appendix A attached.

FAVORABLE ENVIRONMENTAL EFFECTS

- a. Reduce average annual flood damages \$34,070 or 95 percent.
- b. Improve ecological condition of rangeland vegetation, thereby increasing average annual herbage production 45 percent and decreasing soil movement 15 percent.
- c. Improve the efficiency of using irrigation water 25 percent.
- d. Restore 85 acres of cropland to former productivity.
- e. Improve economic conditions in the watershed area including secondary benefits estimated to be \$4,150 annually.
- f. Provide about 17 man-years of employment for construction of project measures.
- g. Provide for more efficient use of farm labor.
- h. Reduce soil movement on cropland 40 percent.

ADVERSE ENVIRONMENTAL EFFECTS

- a. Disrupt vegetative cover on about 75 acres of rangeland for about 2 years to install structural measures.
- b. Installation of project measures will commit about 100 acres of rangeland to use as a dam and reservoir including 75 acres of vegetation permanently lost.
- c. Replace weedy wildlife habitat on 85 acres with habitat found on intensively farmed irrigated cropland.

ALTERNATIVES

Alternatives to the recommended project were evaluated. Alternatives evaluated include: (a) Conservation land treatment; (b) floodplain management; and, (c) a constructed floodway.

Conservation land treatment of the watershed without structural works would produce the same increases in vegetation and reductions in erosion described for the recommended project. Conservation land treatment alone would reduce flood damage about 1 percent.

Floodplain management or flood-proofing alone or in combination with land treatment would provide no additional flood damage reduction because of the inability to outlet floodwaters.

Sufficient channel capacity could be excavated to transmit floodwater through the floodplain. The estimated average annual cost of channel excavation would be about \$42,000. Channel excavation would provide about the same degree of protection afforded by the recommended project. A constructed floodway would require about 30 acres of irrigated cropland for use as channel, require redevelopment of bisected irrigated fields, disrupt highway and railroad use during construction, and deliver sediment and debris to the North Platte River estimated to be at least 2.4 acre-feet annually.

Without planned project action, problems described would continue. On-going programs would continue but would be unproductive in meeting resource treatment needs because of flood hazards. No-project action would forego, at present value, approximately \$125,000 of net benefits anticipated during project life. The present worth of estimated project benefits is \$675,000, and the estimated structural installation cost is \$552,550. A 1-year delay in implementing the project would forego about \$7,070 of net benefits.

SHORT TERM VS. LONG TERM USE OF RESOURCES

Protection afforded by the project is consistent with the need for intensively used agricultural land, safe operation of public transportation utilities, and reliable operation of the Lucerne Canal. Long-term projections of natural resource use in the watershed indicate continued intensive agricultural use. The project provides for protection and conservation of land and water resources which will allow sustained intensive agricultural use.

The project evaluation period is 75 years. However, protection will be afforded well beyond 75 years because average sediment accumulation is estimated to be only 2.4 acre-feet annually. At the end of 75 years sediment will begin to encroach upon the flood pool, and frequency of flow through the emergency spillway will increase slightly. In 75 years renovation of concrete outlet works may be necessary to prolong effectiveness of the structure.

In the general area of Spring Canyon Watershed, four watershed projects have previously been installed for watershed protection and flood prevention. The anticipated cumulative effect of watershed projects in the area is to protect natural resources of the area for sustained agricultural use and to improve the economy of the area.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Installation of the project will commit about 100 acres of land to use as a dam and reservoir. Land use is presently rangeland with a grass plant community. The land does not have potential for use as other than rangeland because of soils limitations and topographic features. Installation of the project will not preclude use or limit presently available alternative uses of any land in the watershed other than land in the dam and reservoir.

CONSULTATION AND REVIEW WITH APPROPRIATE AGENCIES AND OTHERS

General

Efforts to develop a plan for watershed protection and flood prevention in Spring Canyon began in October 1961 when local sponsors submitted an application to the Secretary of Agriculture for planning assistance under authority of PL 566. Following the application for assistance, preliminary investigations were conducted to estimate the physical and economic feasibility of pursuing solutions to the problems outlined in the watershed application. A preliminary investigation report, published in June 1963, indicated a project was not economically feasible. Continuing floods and demands of the sponsors caused further study of watershed problems and possible solutions. A potentially feasible watershed project was identified in a second preliminary investigation report published in December 1969. Authorization to proceed with planning works of improvement was received in July 1970. After planning efforts had begun on Spring Canyon Watershed, the sponsoring organization and interested parties amended the application for planning assistance. The Secretary of Agriculture was requested to include an adjacent drainage and areas between drainages in the authorization for planning assistance. Investigation revealed that a feasible solution to water-related problems in the added drainage was not available. A second amendment to the application for planning assistance was submitted to delete the added hydrologic area.

Activity of the project sponsors to coordinate planning activity, carry on correspondence, and provide public information during project formulation and planning was directed by a steering committee elected by and from residents of the watershed area. The steering committee called meetings of the sponsors, state and federal agencies, and interested parties as needed to formulate project objectives, assemble basic data, coordinate planning efforts, formulate and discuss alternative plans, and make decisions during the planning process. Notice of meetings was provided by correspondence and publishing meeting notices in local newspapers. During plan formulation the steering committee advertised and held two formal public meetings to discuss and consider project alternatives and effects. At each meeting formal and informal public comments were solicited on plan alternatives, project effects, or other considerations.

Discussion and Disposition of Each Problem, Objection, or Issue Raised on the Draft Environmental Statement by Federal, State, and Local Agencies, Private Organizations, and Individuals

The following federal and state agencies were requested to review and comment on the work plan and draft environmental statement:

- Department of Commerce
- Department of the Army, Corps of Engineers
- Environmental Protection Agency
- Department of the Interior
- Department of Health, Education, and Welfare
- The Governor of Wyoming
- Wyoming State Clearinghouse
- Department of Transportation
- Federal Power Commission
- Advisory Council on Historic Preservation

All the above agencies, with the exception of the Federal Power Commission and the Department of Commerce, responded. Each environmental issue, problem, or objection raised by each agency concerning the environmental statement is summarized below, followed by a response indicating the disposition of each comment:

ADVISORY COUNCIL ON HISTORIC PRESERVATION

Comment: To insure a comprehensive review of historical, cultural, archaeological, and architectural resources, the Advisory Council requests that the environmental statement contain evidence of contact with the appropriate State Historic Preservation Officer and that a copy of his comments concerning the effects of the undertaking upon these resources be included in the environmental statement. The State Historic Preservation Officer for Wyoming is Mr. Paul H. Westedt, Director, Wyoming Recreation Commission, 604 East 25th Street, Box 309, Cheyenne, Wyoming 82001.

Response: The narrative has been changed on page 12 to indicate investigations conducted and reports received.

DEPARTMENT OF THE INTERIOR

Comment: Neither the work plan nor the environmental statement mentions mineral resources of the area. Further, there are no reported mineral occurrences, sand and gravel operations, petroleum production, or reported coal reserves in the vicinity of the proposed project. Hence, adverse effects from this proposed project on the mineral industry of Goshen County are not anticipated. However, we believe the text of the work plan and the environmental statement should contain brief statements noting the general lack of mineral resources in the project area in order to show that the possible impact of the project on mineral resources has been considered.

Response: A sentence stating no commercial minerals exist in the watershed has been added on page 6.

Comment: The proposed project is downstream from facilities of our Bureau of Reclamation. However, some right-of-way on the Interstate Canal of our North Platte Project may be affected. Therefore, any further work on this work plan should be coordinated with the Project Manager, North Platte River Projects office, Casper, Wyoming (Telephone: 307-265-5550).

Response: The North Platte Project office of the Bureau of Reclamation has been consulted and involved during all phases of project planning and will be consulted during any further work on this plan.

Comment: Planned Project:

The type of actions and discrete operations involved in each conservation land treatment were not identified. The difference between full conservation land treatment and partial conservation land treatment was not defined. Other information and questions which need to be answered to strengthen the final statement are: how many acres involved in which practice; type of practices; seasons of grazing use; criteria used to determine when grazing use will be deferred; how much, where, what is involved in stockwater development? A map indicating the acreage to be affected by the various measures and/or photographs depicting the area's land form would be helpful.

Response: The Soil Conservation Service does not apply conservation practices. Technical assistance is provided to Conservation Districts, who assist farm and ranch owners and operators in developing their own conservation plans. The actions and discrete operations involved in each basic farm or ranch conservation plan is determined by the objectives and operating plans of each owner or operator.

The type of conservation measures recommended, seasons of grazing use, distribution of stockwater developments, irrigation water management measures, and other criteria for recommended conservation measures are contained in published technical guides of the Soil Conservation Service, available to anyone who is interested in specific details.

The reference to "full conservation land treatment" is to those acres on which all of the needed conservation measures are expected to be applied by the end of the 5-year project installation period. Partial conservation treatment means those acres which will receive some, but not all, of the recommended conservation treatment during the installation period.

Comment: Planned Project:

The description of the structural measures is also inadequate to fully explain measures to be taken. Additional information which would strengthen this section is: how much earthwork excavation is involved in the dam; where will fill material be obtained; how much channelization work, what type, and area will be involved; will a minimum pool be left after each period of high water (this occurrence has been noted in other areas behind supposedly dry flood control dams); length of time required for water to drain out or evaporate; and will reservoir area be cleared of vegetation?

Response: The Structural Measures section has been strengthened to include these points.

Comment: Environmental Setting:

The arrangement of this section inhibits the reader from obtaining a good understanding of the existing environment. A more concise picture could be presented to the reader if this section was organized on an environmental component basis: i.e., climate, vegetation, soils, wildlife, hydrology, cultural values, recreation values, etc.

Response: The format for preparation of environmental statements adopted by the Soil Conservation Service was published in the Federal Register on June 3, 1974.

Comment: The vegetation involved in the waterway is not adequately described. Additional information needed includes vegetation species and density. Description could be improved by showing the various vegetative types in a map. Composition and density of all vegetation should be presented to provide a complete picture of the vegetative resource.

Response: A description of the composition and density of all vegetation in the watershed would be very complex and lengthy. A general description of vegetation is offered on pages 7, 9, and 14 and indicates ecological condition of the resource and successional trends.

Comment: The majority of the proposed project involves the soil resource. However, the description of the soils was not adequate. The various soil types should be shown on a map while their characteristics and management limitations are described in the narrative.

Response: A complete description of all soils and their limitations would be very complex and lengthy. A general description of soils is offered on page 6. Land capabilities are identified on page 7 with footnote explanations and identification of sources of additional information.

Comment: Another major environmental component involved in the project is the water resource (hydrology). Additional information is required to strengthen the description: how much surface flow; when does it occur; velocities; number of wells, springs, and locations; water quality; erosion and sedimentation rates and amounts.

Response: A description of conditions during flood stage indicates surface flow conditions on pages 15 and 16. Runoff occurrence probabilities are discussed on page 15. Wells and springs are not a consideration of the project, except as related to stockwater and other conservation practices necessary for proper range use. Water quality is not an identified problem in the watershed, except as related to transported sediment, debris, and resulting damages. Erosion and soil movement are discussed on pages 14 and 15.

- Comment: Although wildlife species are identified, their habitat was not described. Even though population counts for the area are not available, some estimate of numbers and importance of the area is needed for the reader to understand the importance or lack of importance of this area. Does any of this area form a part of the identified animals' critical habitat or winter range area?
- Response: Wildlife habitat and the views of the Wyoming Game and Fish Commission on these points are described on page 9.
- Comment: For the type of project proposed, it appears that more emphasis was placed on describing the socio-economic conditions of the area rather than the physical resources. Our analysis indicates that the physical resources may be impacted to a greater degree than the socio-economic conditions, and, therefore, the physical resources should be described in more detail.
- Response: A description of physical resources as outlined in the format for environmental statements published in the Federal Register on June 3, 1974, is included.
- Comment: In both the work plan and the environmental statement several negative statements are made with reference to Archaeological and Historic Values and Unique Scenic Areas. Specifically, supporting documentation is needed. The final environmental statement should state when the area was surveyed, by whom it was surveyed, and include copy of all professional reports. The accuracy of the assessment on page 23, of there being no effect upon archaeological, historic, and scientific resources, cannot be evaluated without such information. In general, the present draft statement lacks adequate consideration of the probable impact to all cultural resources that may be present.
- Response: The narrative has been changed on page 12 to indicate investigations conducted and reports received.
- Comment: While the draft environmental statement reflects consultation with the National Register of Historic Places, the final statement should establish that the Federal Register for February 19, 1974, and all succeeding supplements, were consulted. If a proposed project will have an effect on a National Register property, the statement must then reflect compliance with Section 106 of the National Historic Preservation Act of 1966 (P.L. 89-665) and Executive Order 11593 of May 15, 1971, for the Protection and Enhancement of the Cultural Environment.
- Response: The narrative on page 12 has been changed to indicate that notices in the Federal Register have been consulted.

- Comment: The statement does not clearly confirm consultation with the State Historic Preservation Officer for the State involved. He is Mr. Paul Westedt, Director, Wyoming Recreation Commission, 604 East 25th Street, Box 309, Cheyenne, Wyoming 82001. The final environmental statement should reflect that he was consulted to determine whether the proposal will affect any cultural site which may be in the process of nomination to the National Register of Historic Places and contain a copy of his response.
- Response: The narrative on page 12 has been changed to so indicate.
- Comment: Where Federally owned or controlled lands would be affected by the proposed action, the environmental statement should reflect the consideration given objects of historical, architectural, and archaeological significance under Section 2 (b) of the Executive Order.
- Response: No federally owned or controlled lands will be affected by the proposed action.
- Comment: The State Archaeologist, Dr. George Frison, Department of Anthropology, University of Wyoming, University Station, Box 3431, Laramie, Wyoming 82070, should be consulted for information and recommendations pertaining to archaeological remains in the project area. It may be necessary to conduct a professional archaeological survey of all lands to be directly affected by implementation of planned structural measures in order to locate and assess presently unrecorded archaeological resources. The final statement should detail arrangements that have been made to provide for such a survey and mitigation, if necessary. Furthermore, the final statement should also reflect measures to be taken in the event that previously unknown cultural resources are encountered during construction.
- Response: The narrative on page 12 has been changed to reflect a consultation held with Dr. Frison and measures to be taken in the event that previously unknown cultural resources are encountered during construction.
- Comment: Environmental Impacts:
It is difficult to develop an adequate and comprehensive impact analysis without a sufficient and detailed project and environmental setting description. The impacts are listed without any analysis to provide supporting documentation for the conclusions reached. The impacts are generalized which indicates the apparent lack of a comprehensive and detailed analysis procedure; i.e., Page 16, "...will improve and enhance aesthetic (how, where, what extent), wildlife (where, what type, what species), and recreational values (how, basically private land with no public access)..."
- Response: The statement is a general statement of anticipated project influence and is not related to a specific occurrence. Explanations provided are general indicators of erosion, vegetation production, soil productivity, and irrigation water use.

- Comment: What will the impact of the borrow be? Where will it be located? What type of vegetation will be destroyed? How will the area be rehabilitated? How much productive soil surface will be lost to all facilities? What will the impact be of the periodic filling of the reservoir and release of flood waters?
- Response: The Structural Measures section of the "PLANNED PROJECT" has been rewritten to clarify these points.
- Comment: The impacts are not specific; i.e., page 17, "Flood damage to farmsteads will be reduced from eight to three." Species of vegetation and amount lost to reservoir area are not identified.
- Response: Farmstead flood damage has been clarified in the narrative. Vegetation in the reservoir area is discussed on page 5.
- Comment: The environmental statement should address the effect of proposed water conservation practices on the river regime. A discussion should also be included on any reduced water yield to the North Platte River.
- Response: Project effects on the river regime of the North Platte River will be immeasurably small. The controlled flow of 20 c.f.s. is less than 1 percent of the average summer flow of the Platte River. Watershed yield to the North Platte River will not significantly change. Timing of the yield will change from hours to days.
- Comment: The second sentence of the sixth full paragraph on page 14 of the draft environmental statement should be clarified. The additional time needed to irrigate flooded lands does not appear to be a major problem.
- Response: Additional time required to irrigate flooded land is not a major problem and is, therefore, considered together with other minor flood induced problems to estimate indirect flood damages discussed in the second full paragraph on page 16.
- Comment: Conclusions reached as to impacts are not supported by analysis or data; i.e., Page 18, "Project measures will exert an overall economic force which will tend to increase and stabilize income, reduce underemployment and unemployment, and reduce the rate of population outmigration."
- Response: The statement is a general statement of anticipated project influence on economic indicators.
- Comment: Alternatives:
This section lacks a complete and thorough description and impact analysis to allow the reader to judge the relative merits of each alternative as compared with each other and the proposed project.
- Response: When considering the options available in the watershed and the objectives of the sponsors, we feel the Alternatives Section is adequate.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Comment: It appears to us that the potential environmental impacts of the proposed action have been adequately addressed and we would concur with the document as written.

Response: None.

DEPARTMENT OF THE ARMY

Comment: We have reviewed this work plan and foresee no conflict with any projects or current proposals of this Department. The draft environmental statement satisfies the requirements of Public Law 91-190, 91st Congress, insofar as this Department is concerned.

Response: None.

DEPARTMENT OF TRANSPORTATION

Comment: The Department of Transportation has reviewed the material submitted. We have no comments to offer nor do we have any objection to the project.

Response: None.

ENVIRONMENTAL PROTECTION AGENCY

Comment: The Environmental Protection Agency has reviewed the draft environmental statement for Spring Canyon Watershed, Wyoming and finds that it satisfactorily addresses the environmental impacts of the proposed action.

Response: None.

STATE OF WYOMING

Comment: The present sponsoring agencies for the project lack the necessary legal authority to install a watershed plan.

Response: The Lucerne Power and Irrigation Company is presently amending their articles to incorporation to provide for the legal authority to implement the watershed work plan.

Comment: The plan appears to be favorable and, if implemented, will help to achieve state goals and objectives, and you may consider this letter my official approval and endorsement for the project.

Response: None.

LIST OF APPENDIXES

Appendix A - Comparison of Benefits and Costs for Structural Measures

Appendix B - Letters of Comments Received on the Draft Environmental
Statement - to be included in the Final Environmental
Statement

Appendix C - Dam and Reservoir Diagrams

Appendix D - Project Map

APPROVED BY Blaire O'Halloran DATE 10/17/12
(State Conservationist)

APPENDIX A - COMPARISON OF BENEFITS AND COSTS FOR STRUCTURAL MEASURES

Spring Canyon Watershed, Wyoming

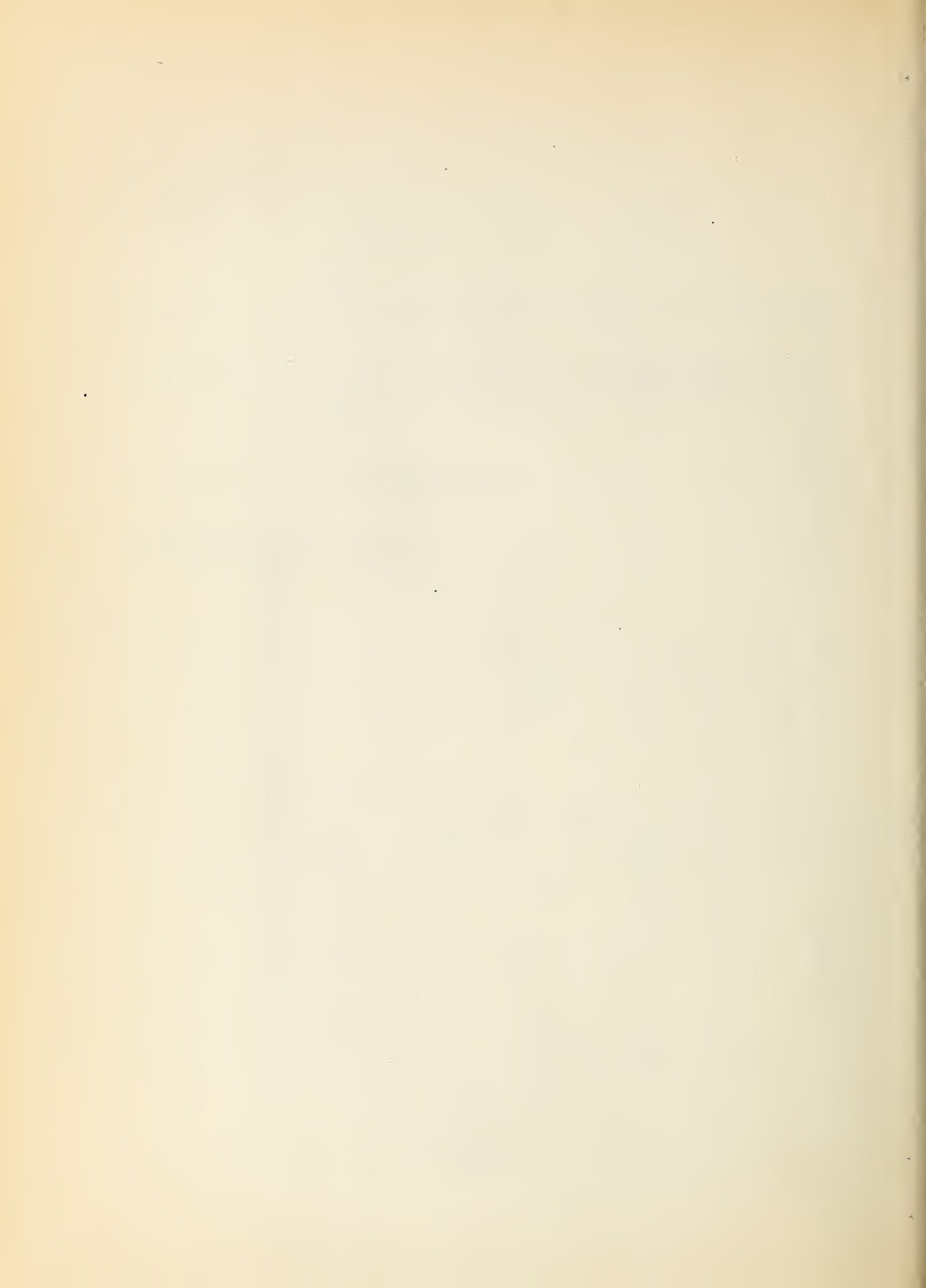
(Dollars)

| Evaluation Unit | AVERAGE ANNUAL BENEFITS <u>1/</u> | | Total | Avg. Annual Cost | Benefit Cost Ratio |
|---|-----------------------------------|-----------|--------|------------------|--------------------|
| | Damage Reduction <u>2/</u> | Secondary | | | |
| Floodwater Retarding Structure and Outlet Canal | 33,720 | 4,150 | 37,870 | 27,850 | 1.4:1.0 |
| Project Administration | | | | 4,250 | |
| GRAND TOTAL | 33,720 | 4,150 | 37,870 | 32,100 | 1.2:1.0 |

1/ Price base: Adjusted Normalized

2/ In addition, it is estimated that land treatment measures will provide flood damage reduction benefits of \$350 annually.

October 1974



APPENDIX B -

LETTERS OF COMMENT RECEIVED ON THE DRAFT ENVIRONMENTAL STATEMENT



Deputy Administrator for
Water Resources

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80203

8/6 12:10 PM
W. J. [unclear]

AUG 1 1974

Mr. Kenneth E. Grant, Administrator
Soil Conservation Service
U. S. Department of Agriculture
Washington, D.C. 20250

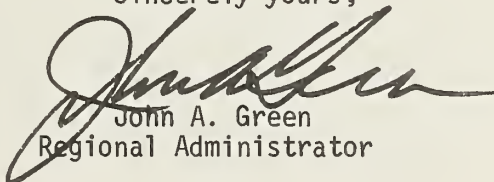
Dear Mr. Grant:

The Environmental Protection Agency has reviewed the draft environmental statement for Spring Canyon Watershed, Wyoming and finds that it satisfactorily addresses the environmental impacts of the proposed action.

In accordance with current EPA guidelines, the proposed action and environmental statement will be listed in the Federal Register as LO-1. A copy of the rating system is enclosed for your information.

Please send us two copies of the final statement.

Sincerely yours,


John A. Green
Regional Administrator

Enclosure

Environmental Impact of the Action

LO--Lack of Objections

EPA has no objections to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER--Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EU--Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1--Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2--Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3--Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Deputy Administrator for
Water Resources

7/31/74
Kling

JUL 23 1974

In Reply Refer to:
ER-74/708

Dear Mr. Grant:

Thank you for the letter of May 23, 1974, requesting our views and comments on a work plan and draft environmental impact statement for the Spring Canyon Watershed, Goshen County, Wyoming.

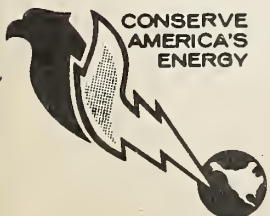
We have completed our review of the subject documents and submit the following comments for your consideration and use.

Work Plan

No established or studied units of the National Park System appear to be adversely affected by the proposal. It also does not appear to adversely affect any site registered as a National Historic, Natural, or Environmental Education Landmark, or any site listed as eligible for such registration.

Neither the work plan nor the environmental statement mentions mineral resources of the area. Further, there are no reported mineral occurrences, sand and gravel operations, petroleum production, or reported coal reserves in the vicinity of the proposed project. Hence, adverse effects from this proposed project on the mineral industry of Goshen County are not anticipated. However, we believe the text of the work plan and the environmental statement should contain brief statements noting the general lack of mineral resources in the project area in order to show that the possible impact of the project on mineral resources has been considered.

The proposed project is downstream from facilities of our Bureau of Reclamation. However, some right-of-way on the Interstate Canal of our North Platte Project may be affected. Therefore, any further work on this work plan should be coordinated with the Project Manager, North Platte River Projects Office, Casper, Wyoming (Telephone: 307-265-5550).



Save Energy and You Serve America!



Draft Environmental Statement

The following comments are directed to the specific sections of the draft statement.

Planned Project:

The type of actions and discrete operations involved in each conservation land treatment were not identified. The difference between full conservation land treatment and partial conservation land treatment was not defined. Other information and questions which need to be answered to strengthen the final statement are: how many acres involved in which practice; type of practices; seasons of grazing use; criteria used to determine when grazing use will be deferred; how much, where, what is involved in stockwater development? A map indicating the acreage to be affected by the various measures and/or photographs depicting the area's land form would be helpful.

The description of the structural measures is also inadequate to fully explain measures to be taken. Additional information which would strengthen this section is: how much earthwork excavation is involved in the dam; where will fill material be obtained; how much channelization work, what type, and area will be involved; will a minimum pool be left after each period of high water (this occurrence has been noted in other areas behind supposedly dry flood control dams); length of time required for water to drain out or evaporate; and will reservoir area be cleared of vegetation?

Environmental Setting:

The arrangement of this section inhibits the reader from obtaining a good understanding of the existing environment. A more concise picture could be presented to the reader if this section was organized on an environmental component basis: i.e., climate, vegetation, soils, wildlife, hydrology, cultural values, recreation values, etc.

The vegetation involved in the waterway is not adequately described. Additional information needed includes vegetation species and density. Description could be improved by showing the various vegetative types in a map. Composition and density of all vegetation should be presented to provide a complete picture of the vegetative resource.

The majority of the proposed project involves the soil resource. However, the description of the soils was not adequate. The various soil types should be shown on a map while their characteristics and management limitations are described in the narrative.

Another major environmental component involved in the project is the water resource (hydrology). Additional information is required to strengthen the description: how much surface flow; when does it occur; velocities; number of wells, springs, and locations; water quality; erosion and sedimentation rates and amounts.

Although wildlife species are identified, their habitat was not described. Even though population counts for the area are not available, some estimate of numbers and importance of the area is needed for the reader to understand the importance of lack of importance of this area. Does any of this area form a part of the identified animals' critical habitat or winter range area?

For the type of project proposed, it appears that more emphasis was placed on describing the socio-economic conditions of the area rather than the physical resources. Our analysis indicates that the physical resources may be impacted to a greater degree than the socio-economic conditions, and, therefore, the physical resources should be described in more detail.

In both the work plan and the environmental statement several negative statements are made with reference to Archeological and Historic Values and Unique Scenic Areas. Specifically, supporting documentation is needed. The final environmental statement should state when the area was surveyed, by whom it was surveyed, and include copy of all professional reports. The accuracy of the assessment on page 23, of there being no effect upon archeologic, historic, and scientific resources, cannot be evaluated without such information. In general, the present draft statement lacks adequate consideration of the probable impact to all cultural resources that may be present.

While the draft environmental statement reflects consultation with the National Register of Historic Places, the final statement should establish that the Federal Register for February 19, 1974, and all succeeding supplements, were consulted. If a proposed project will have an effect on a National Register property, the statement must then reflect compliance with Section 106 of the National Historic Preservation Act of 1966 (P.L. 89-665) and Executive Order 11593 of May 15, 1971, for the Protection and Enhancement of the Cultural Environment.

The statement does not clearly confirm consultation with the State Historic Preservation Officer for the State involved. He is Mr. Paul Westedt, Direct, Wyoming Recreation Commission, 604 East 25th Street, Box 309, Cheyenne, Wyoming 82001. The final environmental statement should reflect that he was consulted to determine whether the proposal will affect any cultural site which may be in the process of nomination to the National Register of Historic Places and contain a copy of his response.

Where Federally owned or controlled lands would be affected by the proposed action, the environmental statement should reflect the consideration given objects of historical, architectural and archeological significance under Section 2 (b) of the Executive Order.

The State Archeologist, Dr. George Frison, Department of Anthropology, University of Wyoming, University Station, Box 3431, Laramie, Wyoming 82070, should be consulted for information and recommendations pertaining to archeological remains in the project area. It may be necessary to conduct a professional archeological survey of all lands to be directly affected by implementation of planned structural measures in order to locate and assess presently unrecorded archeological resources. The final statement should detail arrangements that have been made to provide for such a survey and mitigation, if necessary. Furthermore, the final statement should also reflect measures to be taken in the event that previously unknown cultural resources are encountered during construction.

Environmental Impacts:

It is difficult to develop an adequate and comprehensive impact analysis without a sufficient and detailed project and environmental setting description. The impacts are listed without any analysis to provide supporting documentation for the conclusions reached. The impacts are generalized which indicates the apparent lack of a comprehensive and detailed analysis procedure; i.e., Page 16, "...will improve and enhance aesthetic (how, where, what extent), wildlife (where, what type, what species), and recreational values (how, basically private land with no public access)..."

What will the impact of the borrow be? Where will it be located? What type of vegetation will be destroyed? How will the area be rehabilitated? How much productive soil surface will be lost to all facilities? What will the impact be of the periodic filling of the reservoir and release of flood waters?

The impacts are not specific; i.e., Page 17, "Flood damage to farmsteads will be reduced from eight to three." Species of vegetation and amount lost to reservoir area are not identified.

The environmental statement should address the effect of proposed water conservation practices on the river regime. A discussion should also be included on any reduced water yield to the North Platte River.

The second sentence of the sixth full paragraph on page 14 of the draft environmental statement should be clarified. The additional time needed to irrigate flooded lands does not appear to be a major problem.

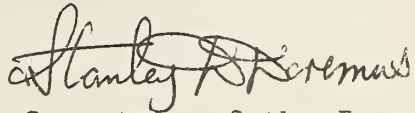
Conclusions reached as to impacts are not supported by analysis or data; i.e., Page 18, "Project measures will exert an overall economic force which will tend to increase and stabilize income, reduce underemployment and unemployment, and reduce the rate of population outmigration."

Alternatives:

This section lacks a complete and thorough description and impact analysis to allow the reader to judge the relative merits of each alternative as compared with each other and the proposed project.

We trust the foregoing comments will assist you in processing this report to the Congress.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Stanley D. Kremen". The signature is fluid and cursive, with the first name "Stanley" being more prominent.

Deputy Assistant

Secretary of the Interior

Mr. Kenneth E. Grant
Administrator
Soil Conservation Service
Department of Agriculture
Washington, D. C. 20250



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGION VIII
FEDERAL OFFICE BUILDING
19TH AND STOUT STREETS
DENVER, COLORADO 80202

Deputy Administrator for
Water Resources

~~H. B. Jones~~ 7/30
Klingelhofner

July 23, 1974

OFFICE OF THE REGIONAL DIRECTOR

Kenneth E. Grant, Administrator
United States Department of Agriculture
Soil Conservation Service
Washington, D.C. 20250

Dear Sir:

The Department of Health, Education and Welfare has completed its review of the Draft Environmental Impact Statement on the Spring Canyon Watershed, Wyoming.

It appears to us that the potential environmental impacts of the proposed action have been adequately addressed and we would concur with the document as written.

Yours truly,

Rulon R. Garfield
for Rulon R. Garfield
Regional Director

cc: Office of Environmental Affairs
Att: Phyllis Hayes
Council on Environmental Quality
Att: Warren Muir



DEPARTMENT OF THE ARMY
WASHINGTON, D.C. 20310

Secy's Cont. 57488
James M. ...

22 JUL 1974

Honorable Robert W. Long
Assistant Secretary of Agriculture
Washington, D. C. 20250

Dear Mr. Long:

In compliance with the provisions of Section 5 of Public Law 566, 83rd Congress, the Administrator of the Soil Conservation Service, by letter of 23 May 1974, requested the views of the Secretary of the Army on the work plan and draft environmental statement for the Spring Canyon Watershed, Wyoming.

We have reviewed this work plan and foresee no conflict with any projects or current proposals of this Department. The draft environmental statement satisfies the requirements of Public Law 91-190, 91st Congress, insofar as this Department is concerned.

Sincerely,

Charles R. Ford

Charles R. Ford
Chief
Office of Civil Functions



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Deputy Administrator for
Water Resources

MAILING ADDRESS:
U.S. COAST GUARD G-WS/73
400 SEVENTH STREET SW.
WASHINGTON, D.C. 20590
PHONE: (202) 426 2263

17 JUL 1974

7/19

Mr. Kenneth E. Grant
Administrator
Soil Conservation Service
Department of Agriculture
Washington, D. C. 20250

Dear Mr. Grant:

This is in response to your letter of 23 May 1974 addressed to Admiral Bender concerning a draft environmental impact statement for the Spring Canyon Watershed Project, Goshen County, Wyoming.

The Department of Transportation has reviewed the material submitted. We have no comments to offer nor do we have any objection to the project.

The opportunity to review this application is appreciated.

Sincerely,

R. I. PRICE
Rear Admiral, U.S. Coast Guard
Chief, Office of Marine Environment
and Systems

197 JUL 15 PM 2:21
SOIL CONSERVATION SERVICE

Advisory Council
On Historic Preservation

1522 K Street N.W. Suite 430
Washington D.C. 20005

RECEIVED MAIL ROOM
1974 JUN 17
June 13, 1974
SOIL CONSERVATION SERVICE

Mr. Kenneth E. Grant
Administrator
Soil Conservation Service
U.S. Department of Agriculture
Washington, D.C. 20250

Dear Mr. Grant:

This is in response to your request of May 23, 1974, for comments on the environmental statement for the Spring Canyon Watershed, Goshen County, Wyoming. Pursuant to its responsibilities under Section 102(2)(C) of the National Environmental Policy Act of 1969, the Advisory Council on Historic Preservation has determined that while you have discussed the historical, architectural, and archeological aspects related to the undertaking, the Advisory Council needs additional information to adequately evaluate the effects on these cultural resources. Please furnish additional data indicating:

- a. Compliance with Executive Order 11593 "Protection and Enhancement of the Cultural Environment" of May 13, 1971
 1. Under Section 2(a) of the Executive Order, Federal agencies are required to locate, inventory, and nominate eligible historic, architectural and archeological properties under their control or jurisdiction to the National Register of Historic Places. The results of this survey should be included in the environmental statement as evidence of compliance with Section 2(a). The fact that "there are no known areas of archeologic and historic significance" does not mean that there are no historical and archeological resources present. Such information can only be determined following a comprehensive cultural survey of the project area.
 2. Until the inventory required by Section 2(a) is complete, Federal agencies are required by Section 2(b) of the Order to submit proposals for the transfer, sale, demolition, or substantial alteration of federally-owned properties eligible for inclusion in the National Register to the Council for review and comment. Federal agencies must continue to comply with Section 2(b) review requirements even after the initial inventory is complete, when they obtain jurisdiction or control over additional properties that are eligible for inclusion in the National Register or when properties under their jurisdiction or control are found to be eligible for inclusion in the National Register subsequent to the initial inventory.

The environmental statement should contain a determination as to whether or not the proposed undertaking will result in the transfer, sale, demolition or substantial alteration of eligible National Register properties under Federal jurisdiction. If such is the case, the nature of the effect should be clearly indicated as well as an account of the steps taken in compliance with Section 2(b) (Procedures for compliance with the Executive Order are detailed in the Federal Register of January 25, 1974, "Procedures for the Protection of Historic and Cultural Properties", pp. 3366-3370).

3. Under Section 1(3), Federal agencies are required to establish procedures regarding the preservation and enhancement of non-federally owned historic, architectural, and archeological properties in the execution of their plans and programs.

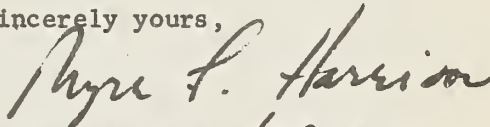
The environmental statement should contain a determination as to whether or not the proposed undertaking will contribute to the preservation and enhancement of non-federally owned districts, sites, buildings, structures and objects of historical, architectural or archeological significance.

b. Contact with State Historic Preservation Officer

To insure a comprehensive review of historical, cultural, archeological, and architectural resources, the Advisory Council requests that the environmental statement contain evidence of contact with the appropriate State Historic Preservation Officer and that a copy of his comments concerning the effects of the undertaking upon these resources be included in the environmental statement. The State Historic Preservation Officer for Wyoming is Mr. Paul H. Westedt, Director, Wyoming Recreation Commission, 604 East 25th Street, Box 309, Cheyenne, Wyoming 82001.

Should you have any questions or require any additional assistance, please contact Jordan Tannenbaum (202-254-3974) of the Advisory Council staff.

Sincerely yours,



Ann Webster Smith *AWWS*
Director, Office of Compliance

B. O. Halliday, SCS, Casper, Wyoming

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Washington, D. C. 20250

| TO: | | THIS COPY |
|-----|-------------|-----------|
| BOH | | |
| HCS | | |
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| JRL | JUN 19 1974 | |
| JRK | | |
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| | | |

Ms. Ann Webster Smith
Director, Office of Compliance
Advisory Council on Historic Preservation
1522 K Street, N.W., Suite 430
Washington, D.C. 20005

Dear Ms. Smith:

This responds to your letter of June 13, 1974, concerning the environmental statement for the Spring Canyon Watershed project, Goshen County, Wyoming. You indicated the Advisory Council needs additional information to adequately evaluate the effects on cultural resources.

You raised three questions pertaining to the compliance with Executive Order 11593, "Protection and Enhancement of the Cultural Environment" of May 13, 1971. The first of your questions dealt with the location, inventory, and nomination of eligible historic and architectural and archeological properties under federal control of the SCS. The second question you raised deals with the transfer, sale, demolition, or substantial alteration of federally owned properties eligible for inclusion in the National Register to the Council for review and comment.

In regard to these two questions, the Soil Conservation Service neither owns nor controls property in this watershed nor will gain control of any property as a result of the proposed project. The Soil Conservation Service provides federal assistance to local units of government under the Watershed Protection and Flood Prevention Act authorized by Public Law 83-566. For this type of action, we believe our actions in compliance with the National Environmental Policy Act of 1969 will meet the requirements of Executive Order 11593. To be more specific: (1) implementation of the Spring Canyon Watershed project will not result in transfer, sale, demolition, or alteration of any site listed in the National Register of Historic Places; and (2) implementation of this project should neither contribute to nor detract from the preservation and enhancement of non-federally owned districts, sites, buildings, structures, and objects of historic, archeological, architectural, or cultural significance.



In regard to your question 3 dealing with the requirement that federal agencies establish procedures regarding the preservation and enhancement of non-federally owned historic, architectural, and archeological properties in the execution of their plans and programs, the Soil Conservation Service on June 3, 1974, published in the Federal Register its guidelines for the preparation of environmental impact statements. Contained in these guidelines are our procedures regarding the preservation and enhancement of non-federally owned historic, architectural, and archeological properties.

Although the Spring Canyon Watershed environmental statement was brief in its description of archeological and historical places of value, it is stated that none will be involved in construction of the structural measures in this project. During the process of plan formulation, the Soil Conservation Service planning staff in Wyoming did contact Mr. Paul H. Westedt, Director of the Wyoming Recreation Commission, who is the State Historic Preservation Officer for Wyoming. Through consultations with Mr. Westedt and the National Park Service, it has been determined that the Spring Canyon Watershed project will not affect any archeological, architectural, or historic places of value. The final environmental statement will be strengthened to provide specific reference to consultation between SCS, the National Park Service, and the State Historic Preservation Officer.

We trust that this explanation will be sufficient to answer the questions you raised.

Sincerely,

William B. Davey Acting

Kenneth E. Grant
Administrator

bc:

B. O. Halliday, SCS, Casper, Wyoming ✓
K. L. Williams, SCS, Portland, Oregon
P. O. Tilker, SCS, Portland, Oregon

Advisory Council
On Historic Preservation

1312 K Street N.W. Suite 430
Washington D.C. 20005

Deputy Administrator for
Water Resources

July 17, 1974

7/19

[Handwritten signature]
File

[Handwritten signature]

Mr. Kenneth E. Grant
Administrator
Soil Conservation Service
U.S. Department of Agriculture
Washington, D.C. 20250

Dear Mr. Grant:

The Advisory Council on Historic Preservation has reviewed your letter of June 25, 1974, containing the requested additional data on the environmental statement for the Spring Canyon Watershed Project in Goshen County, Wyoming, and its effect on historical, archeological, architectural and cultural resources in the project area. The Council has determined that the Soil Conservation Service, U.S. Department of Agriculture, has satisfactorily responded to its June 13, 1974, comments on the Draft Environmental Statement.

Sincerely yours,

[Handwritten signature: Ann Webster Smith]

Ann Webster Smith
Director, Office of Compliance

1974 JUL 18 10 00 AM
U.S. DEPT. OF AGRICULTURE
OFFICE OF COMPLIANCE

Deputy Administrator for
Water Resources



WYOMING
EXECUTIVE DEPARTMENT
CHEYENNE

STANLEY K. HATHAWAY
GOVERNOR

July 26, 1974

Mr. Kenneth E. Grant, Administrator
Soil Conservation Service
U. S. Department of Agriculture
Washington, D. C. 20250

Dear Mr. Grant:

I have reviewed the Draft Watershed Work Plan and the Draft Environmental Statement for the Spring Canyon Watershed, Goshen County, Wyoming, and believe that it will assure many flood control benefits for the area under consideration.

The present sponsoring agencies for the project lack the necessary legal authority to install a watershed plan.

The plan appears to be favorable and, if implemented, will help to achieve state goals and objectives, and you may consider this letter my official approval and endorsement for the project.

Sincerely,

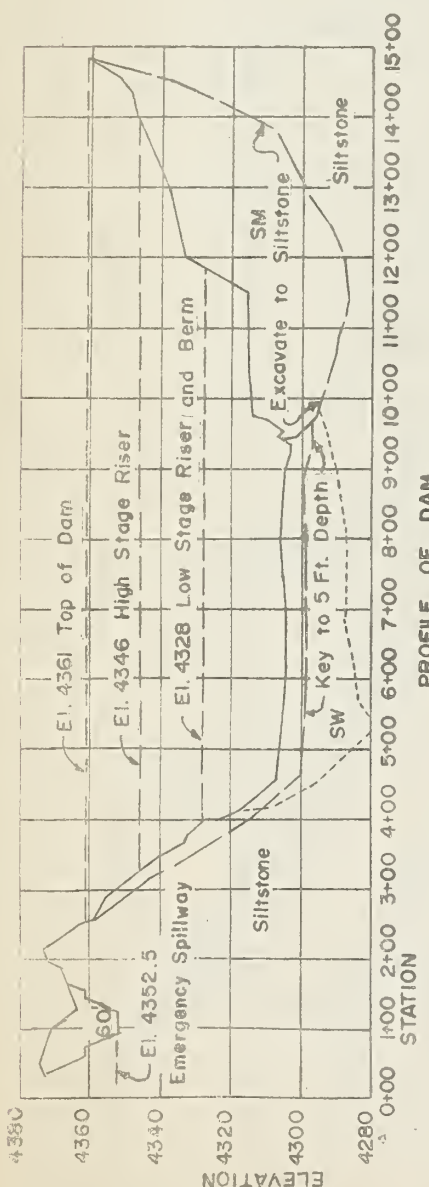
STATE CLEARINGHOUSE

A handwritten signature in dark ink, reading "Vincent J. Horn, Jr.".

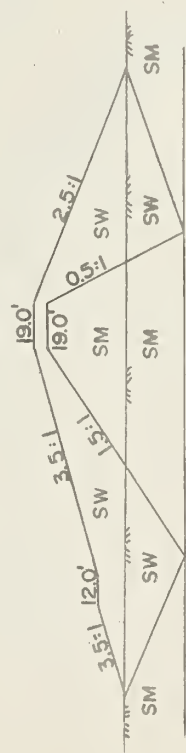
Vincent J. Horn, Jr.
State Planning Coordinator

VJH:shr

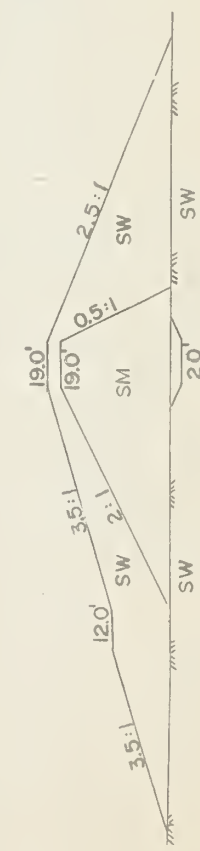
cc: Mr. Blaine O. Halliday



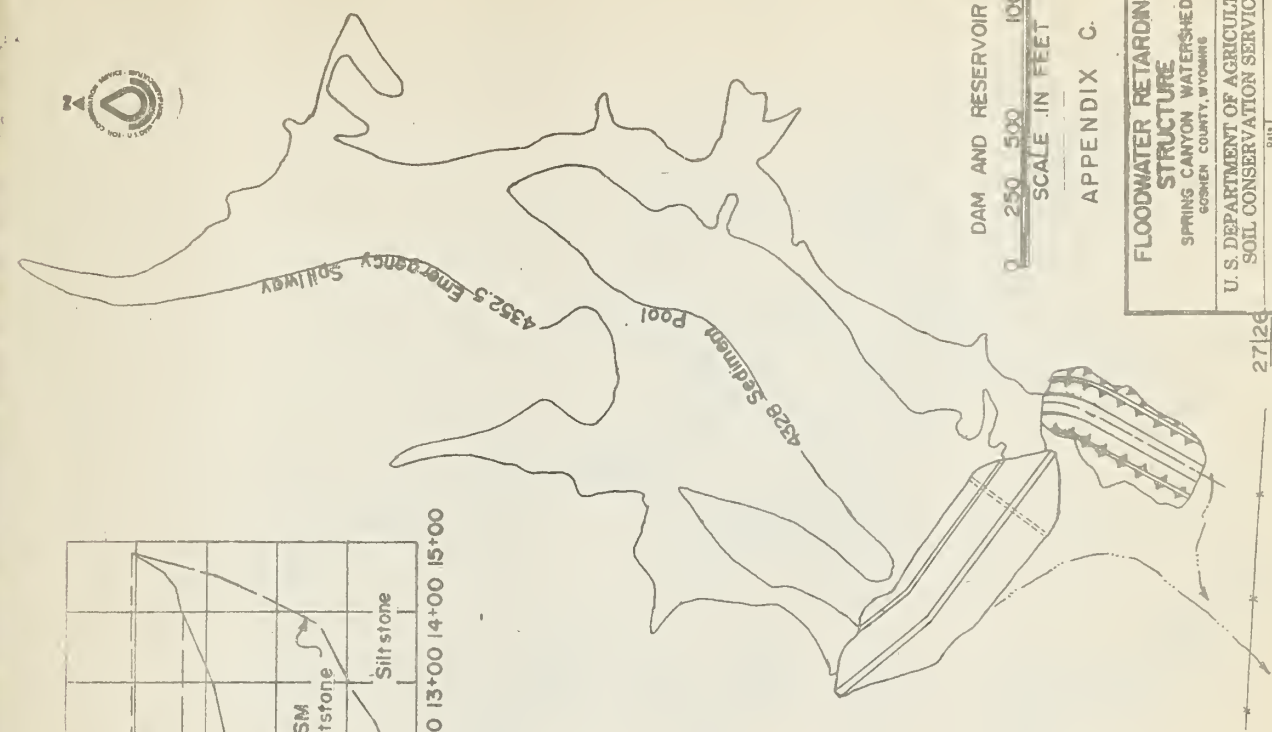
PROFILE OF DAM



CROSS SECTION OVER SM FOUNDATION



CROSS SECTION OVER SW FOUNDATION



DAM AND RESERVOIR
SCALE IN FEET
0 250 500 1000

APPENDIX C.

| | |
|--|----------------------------------|
| FLOODWATER RETARDING STRUCTURE SPRING CANYON WATERSHED COSHEN COUNTY, WYOMING | |
| U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | |
| Approved By: _____ Date: _____ | Checked By: _____ Date: _____ |
| Drawn: _____ Title: _____ | Scale: _____ Sheet: _____ |

27/26
34/35

